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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,658	12/17/2001	Kwang-Leong Choy	674505.2003	3227

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EXAMINER
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PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/024,658

Applicant(s)

CHOY ET AL.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Previous Office Action*

#### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 37-72 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6331330 (US330) in view of EP0252755 (col. 3, 44-58). Instant claim 37 varies from US330 only in that it recites a Ph modifier which is an obvious formulation constituent permitted by claim 37, and claim 37 cites evaporation and decomposition which inherently occurs at the temperatures necessary to deposit the material in US330. Pressure feeding is an obvious variation as set forth in the similar process of EP0252755 to provide coating solution to the outlet. Similar remarks are germane to independent claims 70-72. Claims 38-69 of instant application are the same/ equivalent to claims 2-37 of US330, respectively.

3. Claims 37,39-48 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5,18,23-27 of U.S. Patent No. 6296910

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(US910) in view of EP0252755. Instant claim 37 is the same as that of claim 1 of US910 except it cites pressure feeding which is an obvious variation as set forth in the similar process of EP0252755 to provide coating solution to the outlet. Material solution of US910 encompasses a precursor and solvent (claim 10); the relationship of temperature between substrate and outlet are equivalent, albeit reversed, in instant claim 37 and claim 1 of US910. The progressive heating step of US 910 is permitted by the instant claims. Instant claims 39-48 are the same/ equivalent to claims 2-5,18,23-27 of US910, respectively

4. The terminal disclaimer filed on 1-7-06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of the rejecting patents has been reviewed and is NOT accepted.

5. The terminal disclaimer does not comply with 37 CFR 1.321(b) and/or (c) because: It is directed to a particular claim or claims, which is not acceptable, since "the disclaimer must be of a terminal portion of the term of the entire [patent or] patent to be granted." See MPEP § 1490.

Accordingly, the Double Patenting rejections are maintained.

***Claim Rejections - 35 USC § 102***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 70 is rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al.

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Kim et al is cited for the same reasons previously discussed, which are incorporated herein.

Applicants comments regarding this rejection have been considered and weighed.

At the outset, the Examiner points out Applicants are in error regarding there NOT being temperature gradient between the outlet and substrate as required by claim 70. In figure 1 and associated text, substrate 26 serves a target 8 for the supplied nanodroplets, and 8 includes heater 34 “to promote any desired reaction of the nanodrops and substrate”. Clearly, it is hotter where the heater 34 contacts the substrate than at the outlet for droplets, inherently and necessarily forming a temperature gradient that is greatest at the substrate and decreasing towards the droplet outlet. Thus the argument is not persuasive, and the rejection deemed proper.

8. Claim 72 is rejected under 35 U.S.C. 102(b) as being anticipated by Spiller.

Spiller is cited for the same reasons previously discussed, which are incorporated herein.

Applicants comments regarding this rejection have been considered and weighed.

At the outset, the Examiner points out Applicants are in error regarding there NOT being temperature gradient between the outlet and substrate as required by claim 72. Spiller, line teaches heating the substrate at a sufficient temperature to cause precursor decomposition and solvent vaporization. Thus there MUST be a temperature gradient that is greatest at the substrate and decreasing towards the droplet outlet. It is unclear how such a gradient differs from that of Applicants’ claim which simply requires “a decreasing temperature gradient from the substrate surface to the outlet”. Clearly that is happening to meet the requirements of Spiller col. 10, 61+ and elsewhere. Spiller also teaches the coating solution is conveyed to a spray head using a pump means which is “pressure feeding” of the solution. Thus these arguments are not persuasive.

***Claim Rejections - 35 USC § 103***

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al .

Kim et al is cited for the same reasons previously discussed, which are incorporated herein. Applicants comments regarding this rejection have been considered and weighed. Applicants appear to be arguing the Examiner's position was a statement of *obviousness* to maintain the field during cooling. In fact the Examiner points out in the earlier rejection (incorporated herein) that the solvent bearing precursor goes through the thermal gradient (dependant upon a plurality of circumstances) and contacts the heated substrate where the precursor undergoes decomposition and solvent evaporation. The latter entails the removal of heat by virtue of the inherent process of evaporation, causing at least some degree of cooling of the material deposited, a simple principle of evaporation. The claim simply does not require anything more as written, since no specific degree of cooling or outcome is required. Thus these arguments are not persuasive.

11. Claims 37-69 distinguish over the prior art for the reasons cited on Remarks page 2, top paragraphs 1-3. Claims are rejected under double patenting above. As always, the Applicants representative is invited to discuss issues with the Examiner. The issues were straight-forward so that the Examiner did not feel an interview prior to Applicants receiving this Action would have been fruitful.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Frederick J. Parker

Primary Examiner

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